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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
HIBBERT, CATHERINE S	

ART UNIT	PAPER NUMBER
1636	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/532,663	FUCHS ET AL.	
	Examiner	Art Unit	
	CATHERINE HIBBERT	1636	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 May 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *4-24* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *4-24* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 6 May 2009 has been entered.

Applicants Amendment to the Claims filed 6 May 2009 is received and entered. Claims 1-3 are cancelled. Claims 4-24 are pending and under consideration in this action.

Response to Amendments/Arguments

Any objections/rejections not repeated herein are within herein.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

The rejection of Claims 4-6, 10-14, 16-18 and 21-22, under 35 U.S.C. 102(b) as being anticipated by Hinds et al in "Enhanced gene replacement in mycobacteria" (Microbiology, 1999, Vol. 145: p. 519-527, entire document; of record) is maintained for reasons already of record and below.

Applicants arguments have been fully considered but are respectfully not found persuasive. Hinds et al teach the UV-irradiation of bacterial plasmid vector DNA in order to enhance subsequent homologous recombination in the mycobacteria. Hinds et al teach the inactivation of M. smegmatis genes and the use of a recombination assay to identify conditions (UV irradiation) in which homologous recombination is enhanced. Hinds et al teach the use of several different "suicide vectors" (p. 520, Table 1) and the use of reporter genes contained within and without the sequence of DNA intended targeted chromosomal insertion (see especially p. 522, Fig.1 and Fig. legend 1). Hinds et al teach the application of this method to gene replacement experiments in M. smegmatis, M. intracellulare, and M. tuberculosis (abstract). In addition, Hinds et al teach the use of single stranded phagemid DNA using the pSYCHOP construct (p. 524, ¶3, lines 1-3). Therefore, Hinds et al anticipates all the limitations of claims 4-6, 10-14, 16-18 and 21-22.

Applicants response is to traverse the rejection by argument and amendment. Applicant states that "Claim 4 is amended herewith to clarify the claimed invention and to sharpen its definition over the prior art of record". Applicant explains in the following how the current amendments to claim 4 are supported in the instant specification and how they distinguish claim 4 from the prior art in the following:

> In particular, claim 4 as filed recited in step a) that the DNA vector containing the nucleic acid of interest "and replicating in said prokaryotic or eukaryotic cell" is contacted with a mutagenic agent blocking the DNA replication in the cell. The quoted language was not intended to suggest a replicating step in addition to the recited contacting step; rather, the quoted language was intended to recite the property of the recited DNA vectors of being replication-competent in the prokaryotic or eukaryotic cell containing the target sequence (at least prior to treatment of the DNA vector with the mutagenic agent). That interpretation is consistent with the disclosure of the specification, see, e.g., the examples.
>
> The present amendment clarifies the language of claim 4 in this respect by now reciting that the DNA vector containing the nucleic acid of interest is "replication competent in said prokaryotic or eukaryotic cell" and is contacted with a mutagenic agent blocking the DNA replication in the cell. As noted above, it is apparent from the examples in the specification that this is the proper interpretation of the original claim language, and it is moreover supported elsewhere throughout the specification, see, e.g., the reference to a "replicative vector" at p. 6, line 25 and the phrasing "and which replicates in said prokaryotic or eukaryotic cell" at p. 7, line 4. See also page 10, lines 11-18 and 28-32, where it is described that the nucleic acid of interest comprises an E. coli replication origin that is used to transform *E. coli* cells. Likewise in the eukaryotic model (p. 22, lines 3-8), the nucleic acid of interest comprises an Epstein-Barr replication origin which allows this nucleic acid of interest to replicate a number of times in a human eukaryotic cell transformed by this nucleic acid molecule. With the language of claim 4 thus clarified, its patentability relative to the previously-applied prior art is believed to be more readily apparent.

In addition, Applicant argues specifically regarding the rejection of claims 4-6, 10, 14,6-18 and 21-22 under 35 USC §102(b) as anticipated by HINDS et al., that "the DNA vector of the present claims is replication competent in the target cell prior to treatment with the mutagenic agent, whereas the suicide plasma of HINDS by design is not". Applicants continue that "the present specification describes the suicide plasma technique of HINDS as having an undesirably low rate of homologous recombination, which is greatly improved by the different technique of the present invention" and further points out that "the DNA molecules described by HINDS, namely, suicide plasmids, single stranded DNA, and phagemids, are all replication-incompetent". Thus, Applicants

argue that "a suicide plasmid is one which, due to a number of different mechanisms, cannot replicate in a host cell following transfection and which comprises a selectable marker gene" and therefore "that selection of cells transfected with the suicide plasmid results in all selected clones having a genomic insertion of the selectable marker gene and associated sequences". In addition, Applicants argue that

> a phagemid or phasmid is a type of cloning vector developed as a co-infection of the M13 helper phage and plasmids to produce a smaller version of the virus. Phagemids contain an origin for double stranded replication as well as an origin for single stranded replication, mostly not comprising the entire phagemid (i.e., only a small part of the phagemid is copied as a single strand), but not all the necessary viral genes to replicate. This means that the presence of a "helper" virus such as f1, is required to provide the rest of the genes necessary to replicate viral proteins to thereby allow more virus particles to be created using the host cell's resources. Without this "helper" virus, however, the phagemid is incapable of independent replication.

Applicants arguments have been fully considered but are respectfully not found persuasive because Applicants arguments are not commensurate with the scope of the claims, as written. For example, Applicants arguments are not commensurate with the scope of the claims because the instant Claim 4 recites:

A method for *in vitro* insertion of a nucleic acid of interest initially included in a DNA vector, within a predetermined target nucleotide sequence present in a chromosome contained in a prokaryotic or eukaryotic cell, said method *comprising:*

a) contacting the DNA vector comprising the nucleic acid of interest, said DNA vector being replication competent in said prokaryotic or eukaryotic cell, with a mutagenic agent blocking the DNA replication in the cell;

b) transfecting said prokaryotic or eukaryotic cells with the DNA vector obtained at the end of step a); and

c) selecting prokaryotic or eukaryotic cells for which the nucleic acid of interest has been integrated into the predetermined target nucleotide sequences result of said transfecting of step b.

It is noted that claims must be given their broadest reasonable interpretation during examination. Accordingly, the broadest reasonable interpretation of the independent Claim 4 does not "relate exclusively to methods in which the DNA vector molecule replicates in the prokaryotic or eukaryotic target cell prior to exposure to a mutagenic agent. The open claim language "comprising" indicates that the method may have additional steps. In addition, the method does not require a step of integration into the chromosomal DNA, but only of selecting cells for which the nucleic acid of interest has been integrated. In addition, step (a), as written, does not require the DNA vector molecule replicates in the target cell, as written.

Therefore, Claims 4-6, 10-14, 16-18, and 21-22 stand rejected under 35 U.S.C. 102(b) as being anticipated by Hinds et al for reasons already of record and above.

The rejection of Claims 4-5, 10-14, 16-19, 21 and 23 under 35 U.S.C. 102(b) as being anticipated by Ganiatsas et al in "SEK1 deficiency reveals mitogen-activated protein kinase cascade crossregulation and leads to abnormal hepatogenesis" (Proc. Natl. Acad. Sci. USA Vol. 95, pp. 6881–6886, June 1998, see whole document; of record) is maintained for reasons already of record and below.

Applicants arguments have been fully considered but are respectfully not found persuasive. Ganiatsas et al teach the use of the mutagenic agent (UV irradiation) in

studies of homologous recombination using vectors containing reporter genes. Ganiatsas et al recite that "W9.5 ES cells were used for homologous recombination" and that "the targeting vector was produced by insertion of a 6-kb *Bgl*II fragment into the *Bam*HI site of pGKneo/TK followed by insertion of a 1-kb *Eco*RI fragment into the *Pme*I site of the resulting vector". Ganiatsas et al further teach that the "Initial selection of targeted ES cells was carried out first in 175 mg/ml G418" (see whole document and especially Materials and Methods section lines 1-9). Therefore, Ganiatsas et al anticipates the limitations of claims 4-5, 10-14, 16-19, 21, and 23.

Applicants response is to traverse the rejection by argument and amendment. Applicant states that "Claim 4 is amended herewith to clarify the claimed invention and to sharpen its definition over the prior art of record". Applicant explains in the following how the current amendments to claim 4 are supported in the instant specification and how they distinguish claim 4 from the prior art in the following:

> In particular, claim 4 as filed recited in step a) that the DNA vector containing the nucleic acid of interest "and replicating in said prokaryotic or eukaryotic cell" is contacted with a mutagenic agent blocking the DNA replication in the cell. The quoted language was not intended to suggest a replicating step in addition to the recited contacting step; rather, the quoted language was intended to recite the property of the recited DNA vectors of being replication-competent in the prokaryotic or eukaryotic cell containing the target sequence (at least prior to treatment of the DNA vector with the mutagenic agent). That interpretation is consistent with the disclosure of the specification, see, e.g., the examples.
>
> The present amendment clarifies the language of claim 4 in this respect by now reciting that the DNA vector containing the nucleic acid of interest is "replication competent in said prokaryotic or eukaryotic cell" and is contacted with a mutagenic agent blocking the DNA replication in the cell. As noted above, it is apparent from the examples in the specification that this is the proper interpretation of the original claim language, and it is moreover supported elsewhere throughout the specification, see, e.g., the reference to a "replicative vector" at p. 6, line 25 and the phrasing "and which replicates in said prokaryotic

or eukaryotic cell" at p. 7, line 4. See also page 10, lines 11-18 and 28-32, where it is described that the nucleic acid of interest comprises an E. coli replication origin that is used to transform *E. coli* cells. Likewise in the eukaryotic model (p. 22, lines 3-8), the nucleic acid of interest comprises an Epstein-Barr replication origin which allows this nucleic acid of interest to replicate a number of times in a human eukaryotic cell transformed by this nucleic acid molecule. With the language of claim 4 thus clarified, its patentability relative to the previously-applied prior art is believed to be more readily apparent.

In addition, Applicants argue specifically regarding the rejection of claims 4-5, 10-14, 16-19, 21 and 23 under 35 USC §102(b) as anticipated by GANIATSAS that "the heat shock or UV exposure described in that publication is performed after the alteration of the genome of the ES cell line and the selection and propagation of the altered cell line to a sufficient density so as to allow western blot analysis to be performed". By contrast, Applicants argue that "in claim 4 the treatment of the DNA vector with the mutagenic agent occurs before the cell containing the target sequence is transfected" and thus argue that "Claim 4 as amended herewith also now makes explicit that the step c) selection of prokaryotic or eukaryotic cells for which the nucleic acid of interest has been integrated into the predetermined target nucleotide sequence, is performed on the prokaryotic or eukaryotic cells that contain the nucleic acid of interest as a result of the transfection of step b)". Therefore, Applicants argue that "as GANIATSAS does not disclose at least these aspects of claim 4, it follows that none of claims 4-5, 10-14, 16-19, 21 and 23 is anticipated by that reference".

Applicants arguments have been fully considered but are respectfully not found persuasive because Applicants arguments are not commensurate with the scope of the claims, as written. For example, Applicants arguments are not

commensurate with the scope of the claims because the instant Claim 4 recites:

A method for *in vitro* insertion of a nucleic acid of interest initially included in a DNA vector, within a predetermined target nucleotide sequence present in a chromosome contained in a prokaryotic or eukaryotic cell, said method *comprising:*

a) contacting the DNA vector comprising the nucleic acid of interest, said DNA vector being replication competent in said prokaryotic or eukaryotic cell, with a mutagenic agent blocking the DNA replication in the cell;

b) transfecting said prokaryotic or eukaryotic cells with the DNA vector obtained at the end of step a); and

c) selecting prokaryotic or eukaryotic cells for which the nucleic acid of interest has been integrated into the predetermined target nucleotide sequences result of said transfecting of step b.

It is noted that claims must be given their broadest reasonable interpretation during examination. Accordingly, the broadest reasonable interpretation of the independent Claim 4 does not "relate exclusively to methods in which the DNA vector molecule replicates in the prokaryotic or eukaryotic target cell prior to exposure to a mutagenic agent. The open claim language "comprising" indicates that the method may have additional steps. In addition, the method does not require a step of integration into the chromosomal DNA, but only of selecting cells for which the nucleic acid of interest has been integrated. In addition, step (a), as written, does not require the DNA vector molecule replicates in the target cell, as written.

Therefore, Claims 4-5, 10-14, 16-19, 21 and 23 stand rejected under 35 U.S.C. 102(b) as being anticipated by Ganiatsas et al for reasons already of record and above.

The rejection of Claims 4-21 and 23-24 under 35 U.S.C. 102(e) as being anticipated by Hoeijmakers et al in "Detection Methods Based on HR23 Protein Binding Molecules (US PGPub No:2003/0124605, filed 20 November 2002, which claims priority to Provisional Application No:60/331.773, filed 21 November 2001, see entire document; of record) is maintained for reasons already of record and below.

Applicants arguments have been fully considered but are respectfully not found persuasive. Hoeijmakers et al teach a method of targeted homologous recombination using vectors comprising identical 5'- and 3'- sequences respective to the target DNA contained in the chromosome (see especially Figure 1). Hoeijmakers et al teach the use of the mutagenic agents such as UV irradiation and 50 and 100uM concentrations of N-acetoxy-2-acetylaminofluorene (NS-AAF) (p.10, ¶ 132) and wherein the nucleic acid of interest encodes a protein of therapeutic interest, wherein an open reading frame is disrupted by a heterologous nucleotide sequence, and which codes an antisense RNA. For example, Hoeijmakers et al recite:

> An Ola129 mHR23A targeting construct was generated by converting the BglII site in exon II of clone pG7M23Ag1 (containing a 4 kb genomic EcoRI fragment subcloned in pGEM7) into a ClaI site, which (due to a ClaI site in the polylinker) allowed deletion of sequences downstream of the BglII site in exon II (clone pG7M23Ag7). Next, the remaining EcoRI site was removed by filling-in the overhangs with Klenow, resulting in clone pG7M23Ag9. After changing the BstXI site into a SalI site, the 3 kb XhoI-SalI fragment was cloned into SalI digested pGEM5, resulting in clone pG5M23Ag17. Next, the 3' arm of the construct, consisting of a Klenow-blunted 1.5 kb SmaI-XbaI fragment starting at the SmaI site in exon VII, was inserted in the blunted NdeI site of pG5M23Ag17 (giving pG5M23Ag20), followed by insertion of a Neo marker cassette in antisense orientation in the ClaI site (giving pG5M23Ag24). Finally, the NotI-NsiI insert of pG5M23Ag24 was recloned into a pGEM-9Zf(-) based vector containing a 2.8 kb thymidine kinase (TK) marker cassette (giving pG5M23Ag30).

In addition, Hoeijmakers et al teach that "cells stably expressing hXPC-GFP/hHR23B were rinsed with PBS, exposed to UV-C light (254 nm; Philips TUV lamp, dose as indicated in the text) and subsequently cultured at 37.degree. C. for various time periods (as indicated in the text). XPC was detected either by immunoblot analysis or by visualization in living cells using fluorescence microscopy. A similar approach was used to study the effect of N-acetoxy-2-acetylaminofluorene (NA-AAF, final concentration 50 or 100 μM)"(p.10, ¶ 132), and further teaches mouse and human (HeLa) cells (p.11, ¶ 136 and 141). Therefore, Hoeijmakers et al anticipates the limitations of claims 4-21 and 23-24.

Applicants response is to traverse the rejection by argument and amendment. Applicant states that "Claim 4 is amended herewith to clarify the claimed invention and to sharpen its definition over the prior art of record". Applicant explains in the following how the current amendments to claim 4 are supported in the instant specification and how they distinguish claim 4 from the prior art in the following:

> In particular, claim 4 as filed recited in step a) that the DNA vector containing the nucleic acid of interest "and replicating in said prokaryotic or eukaryotic cell" is contacted with a mutagenic agent blocking the DNA replication in the cell. The quoted language was not intended to suggest a replicating step in addition to the recited contacting step; rather, the quoted language was intended to recite the property of the recited DNA vectors of being replication-competent in the prokaryotic or eukaryotic cell containing the target sequence (at least prior to treatment of the DNA vector with the mutagenic agent). That interpretation is consistent with the disclosure of the specification, see, e.g., the examples.
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> The present amendment clarifies the language of claim 4 in this respect by now reciting that the DNA vector containing the nucleic acid of interest is "replication competent in said prokaryotic or eukaryotic cell" and is contacted with a mutagenic agent blocking the DNA replication in the cell. As noted above, it is apparent from the examples in the specification that this is the proper interpretation of the original claim language, and it is moreover supported

elsewhere throughout the specification, see, e.g., the reference to a "replicative vector" at p. 6, line 25 and the phrasing "and which replicates in said prokaryotic or eukaryotic cell" at p. 7, line 4. See also page 10, lines 11-18 and 28-32, where it is described that the nucleic acid of interest comprises an E. coli replication origin that is used to transform *E. coli* cells. Likewise in the eukaryotic model (p. 22, lines 3-8), the nucleic acid of interest comprises an Epstein-Barr replication origin which allows this nucleic acid of interest to replicate a number of times in a human eukaryotic cell transformed by this nucleic acid molecule. With the language of claim 4 thus clarified, its patentability relative to the previously-applied prior art is believed to be more readily apparent.

Lastly, Applicants argue regarding the rejection of claims 4-21 and 23-24 under 35 USC §102(e) as anticipated by HOEIJMAKERS, that "the exposure of the altered and unaltered cells of that reference to a DNA lesion inducing agent such as UV, occurs only once suitably and stably transformed cells have been created, selected and propagated into whole animals from which further samples can be derived". Therefore, Applicants again argue that "claim 4 differs from the disclosure of HOEIJMAKERS in its recitation that the DNA vector containing the nucleotide sequence of interest is treated with a mutagenic agent prior to its use in the transformation of a target prokaryotic or eukaryotic cell" and as such, argue that "as HOEIJMAKERS does not disclose at least this aspect of claim 4, it follows that none of claims 4-21 and 23-24 is anticipated by that reference".

Applicants arguments have been fully considered but are respectfully not found persuasive because Applicants arguments are not commensurate with the scope of the claims, as written. For example, Applicants arguments are not commensurate with the scope of the claims because the instant Claim 4 recites: A method for *in vitro* insertion of a nucleic acid of interest initially included in a DNA vector, within a predetermined target nucleotide sequence present in a

chromosome contained in a prokaryotic or eukaryotic cell, said method

comprising:

a) contacting the DNA vector comprising the nucleic acid of interest, said DNA vector being replication competent in said prokaryotic or eukaryotic cell, with a mutagenic agent blocking the DNA replication in the cell;

b) transfecting said prokaryotic or eukaryotic cells with the DNA vector obtained at the end of step a); and

c) selecting prokaryotic or eukaryotic cells for which the nucleic acid of interest has been integrated into the predetermined target nucleotide sequences result of said transfecting of step b.

It is noted that claims must be given their broadest reasonable interpretation during examination. Accordingly, the broadest reasonable interpretation of the independent Claim 4 does not "relate exclusively to methods in which the DNA vector molecule replicates in the prokaryotic or eukaryotic target cell prior to exposure to a mutagenic agent. The open claim language "comprising" indicates that the method may have additional steps. In addition, the method does not require a step of integration into the chromosomal DNA, but only of selecting cells for which the nucleic acid of interest has been integrated. In addition, step (a), as written, does not require the DNA vector molecule replicates in the target cell, as written.

Therefore Claims 4-21 and 23-24 stand rejected under 35 U.S.C. 102(e) as being anticipated by Hoeijmakers et al for reasons already of record and above.

Conclusion

No claims allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CATHERINE HIBBERT, whose telephone number is (571)270-3053. The examiner can normally be reached on M-F 8AM-5PM, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christopher Low can be reached on 571-272-0951. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Respectfully submitted,

Catherine S. Hibbert
Examiner/AU1636

/ Christopher S. F. Low /
Supervisory Patent Examiner, Art Unit 1636